

## **CHAPTER III**

### **RECONNAISSANCE**

## AIRCRAFT WEATHER RECONNAISSANCE

Typhoon forecasting and tropical weather reconnaissance go hand in hand and, in the foreseeable future, it is believed unlikely that good forecasts will be made without aircraft reconnaissance.

During 1960 the most significant change that took place with respect to reconnaissance units in the western Pacific was the deactivation of the 54th WRS in March. The 54th arrived at Andersen AFB, Guam in the summer of 1947, and flew tropical cyclone reconnaissance for a period of 13 years. Upon the deactivation of the 54th, the mission of tropical cyclone reconnaissance was assigned to the 56th WRS at Yokota AB, Japan. The 56th is presently under the command of LT COL E.D. Wallace. Simultaneously with the deactivation of the 54th, Detachment 1 of the 56th was activated at Andersen AFB.

The only significant problem (and it was truly a major problem), having to do with reconnaissance during 1960, was the grounding in early May of all except one of the WB-50 aircraft of the 56th. The grounding was ordered so as to make a complete inspection of all fuel cells and to effect necessary repairs and/or replacement. To provide for tropical cyclone reconnaissance during the interim the WB-50s were to be grounded, the Commander 1st Weather Wing requested the assistance of PACAF. CINCPAC in turn approved PACAF's request for 970 flying hours for tropical storm and typhoon reconnaissance. The aircraft selected for use was the C-130, a cargo type aircraft adaptable to this task. The aircraft were provided by the 315th Air Division with Headquarters at Tachikawa AB, Japan. The 56th WRS furnished a crew member with dual qualifications of navigator - weather observer to supplement the 315th AD crews for each mission. During the period 11 June through 13 September the 315 AD flew a total of 38 tropical cyclone sorties. By mid-September the 56th WRS had in-commission aircraft in a number sufficient to justify the relief of the 315th AD from any further tropical cyclone reconnaissance. The fine support provided by the 315th AD was commendable, particularly since few, if any, of the crews had prior experience in tropical cyclone reconnaissance.

Filling in the breach throughout the Typhoon Season, and doing an outstanding job, was the VW-1 Squadron, Agana NAS, Guam, commanded by Captain C.G. Strum. In addition to making many night radar fixes on typhoons, VW-1 also flew a number of investigations on suspect areas which

could not be flown by the 56th due to the shortage of aircraft (discussed in the foregoing paragraph). During the year VW-1 flew 57 sorties, while other Seventh Fleet units flew an additional 10 sorties.

In spite of the critical shortage of in-commission aircraft during the Typhoon Season, the reconnaissance provided by the 56th WRS was considered excellent. This is evidenced by the fact that for the 6 month period beginning 1 July, the 56th (augmented by the 315th AD until mid-September) met 90 percent of all tropical storm and typhoon requirements leveled by the JTWC. In order to satisfy these requirements, with the limited resources available, the 56th was able to provide only limited reconnaissance on suspect areas and tropical depressions.

The Table, "Sortie - Fix/Investigation Data", in this chapter provides considerable information concerning reconnaissance during the 1960 Season. It should be noted that, with but one exception, the data is for the period 1 July through 31 December. This is because "Requirements versus Fulfilments" data for the period prior to 1 July would have little meaning, since it was not until early July that the 56th WRS had the capability of partially meeting normal tropical cyclone reconnaissance requirements. VW-1 requirements were fulfilled in each case, however no requests were made when aircraft were not available for weather reconnaissance, a situation that existed on several occasions due to other commitments. For this reason "Levied" and "Made/Levied" figures were not presented for USN aircraft.

The 56 WRS normally performed all tropical cyclone reconnaissance at the 700 mb level. The C-130 aircraft usually flew to the tropical cyclone at best cruising altitude (18,000 to 25,000 ft), descended to the 700 mb level, made the fix, and then returned to best cruising altitude. VW-1 aircraft flew most investigations at 500 to 1,500 ft and made most radar fixes on typhoons at 6,000 ft. It is planned that most flights and fixes during 1961 will be made at the 700 mb level.

During 1960, as in the past, the WB-50 aircraft were instrumented with sensitive altimeters, thermometers, radar wind measuring equipment and other meteorological devices. This same equipment will continue to be used in 1961. The C-130 aircraft were not specifically instrumented for weather reconnaissance. Although radio altimeters and radar were available aboard the aircraft, accurate radar wind measuring equipment was not available. The WV-2 aircraft flown by VW-1 were especially well adapted

for fixing typhoons by radar. These aircraft are being equipped for the 1961 Season with the Aerograph Set, AN/AMQ-8, containing temperature, relative humidity, and pressure measuring instruments, the Aircraft Reconnaissance Aneroid Barometer, ML-401/U, and the Aircraft Psychrometer, ML-313/AM.

The TIROS Project promises many advances in the field of tropical meteorology in coming years. The satellite is now capable of initially detecting tropical cyclones, and also of positioning such circulations with sufficient accuracy so that reconnaissance aircraft can be sent directly to the cyclone. At this time, however, it does not appear that the intensity of tropical cyclones can be determined from TIROS photographs with the degree of accuracy required to meet existing operational requirements. Since meteorological satellites will cover areas of the western Pacific which are at present often void of weather observations, earlier detection of tropical cyclones can be expected in the future.

The outlook with regard to tropical cyclone reconnaissance during the 1961 Typhoon Season is bright. All aircraft of the 56th WRS are again flyable, and the crews are "standing by" for the first typhoon of the year. The VW-1 Squadron will provide considerably more reconnaissance than during the past several years. In addition to making night radar fixes on all fully developed typhoons, VW-1 will also make tropical cyclone investigative flights in the area west of Guam and south of 20N.

# SORTIE - FIX/INVESTIGATION DATA

## 1. TROPICAL CYCLONE SORTIES BY SERVICE:

	<u>1959</u>	<u>1960</u>
USAF	320 (98%)	241 (78%)
USN	<u>6</u> ( 2%)	<u>67</u> (22%)
TOTAL	326	308

## 2. TROPICAL CYCLONE SORTIES BY UNIT (01 JULY - 31 DEC 1960)

56TH WEARON	182 (67%)
(*) 315TH AIR DIV	33 (12%)
VW-1	53 (20%)
OTHER USN	<u>2</u> ( 1%)
TOTAL	270

## 3. FIX/INVESTIGATION REQUIREMENTS VS FULFILMENT (01 JULY-31 DEC 1960)

### a. ALL CYCLONES

	<u>USAF</u>	<u>USN</u>
LEVIED	328	
MADE	262	49
MADE/LEVIED	80%	

### b. TYPHOONS & TROPICAL STORMS ONLY

	<u>USAF</u>	<u>USN</u>
LEVIED	267	
MADE	239	35
MADE/LEVIED	90%	

### c. INVESTIGATIONS & TROPICAL DEPRESSIONS ONLY

	<u>USAF</u>	<u>USN</u>
LEVIED	61	
MADE	23	14
MADE/LEVIED	38%	

(\*) LAST CYCLONE MISSION BY 315TH AIR DIV FLOWN ON 13 SEPT 1960